according to Regulation (EC) No. 1907/2006 as amended by (EC) No. 1272/2008

Section 1. Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product Code: JP-K77

Product Name: JP-K77 Printing Ink

X Code: X(01,22,53,63,83)0354

1.2 Relevant identified uses of the substance or mixture and uses advised against:

1.3 Details of the Supplier of the Safety Data Sheet:

Company Name:
Hitachi America, Ltd.
50 Prospect Avenue
Tarrytown, NY 10591

Information: Garan Myers (866)-583-0048

1.4 Emergency telephone number:

Emergency Contact: Chemtrec (800)424-9300

Section 2. Hazards Identification

2.1 Classification of the Substance or Mixture:

2.1.1 Classification according to Regulation (EC) No 1272/2008 [CLP]:

Flammable Liquids, Category 2

Serious Eye Damage/Eye Irritation, Category 2A

Target Organ Systemic Toxicity (single exposure), Category 3

2.2 Label Elements:

2.2.1 Labeling according to Regulation (EC) No 1272/2008 [CLP]:

GHS Signal Word: **Danger**

GHS Hazard Phrases:

H225 - Highly flammable liquid and vapor.
H319 - Causes serious eye irritation.
H335 - May cause respiratory irritation.

GHS Precaution Phrases:

P233 - Keep container tightly closed.
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P240 - Ground/bond container and receiving equipment.
P241 - Use explosion-proof electrical/ventilating/lighting/.../ equipment.
P243 - Take precautionary measures against static discharge.
P242 - Use only non-sparking tools.
P264 - Wash hands thoroughly after handling.
P271 - Use only outdoors or in a well-ventilated area.
P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.

GHS Response Phrases:

P370+378 - In case of fire, use ... to extinguish.
P303+361+353 - IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+351+338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+313 - If eye irritation persists, get medical advice/attention.
P309+311 - Call a POISON CENTER or doctor/physician if exposed or you feel unwell.

P304+340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

GHS Storage and Disposal Phrases:
P403+235 - Store in cool/well-ventilated place.
P501 - Dispose of contents/container to ....
P405 - Store locked up.
P403+233 - Store container tightly closed in well-ventilated place - if product is as volatile as to generate hazardous atmosphere.

2.3 Adverse Human Health Effects and Symptoms: Prolonged or repeated skin contact may cause defatting and dermatitis.

Chronic: May cause reproductive and fetal effects. Laboratory experiments have shown mutagenic effects. Animal studies have reported the development of tumors. Prolonged exposure may cause liver, kidney, and heart damage.

Prolonged or repeated skin contact may cause dermatitis. Chronic inhalation may cause effects similar to those of acute inhalation. Matsushita et al. exposed human volunteers 6 hours/day for 6 days at 500 ppm acetone and found hematologic changes including significantly increased leukocyte and eosinophil counts and decreased neutrophil phagocytic activity.

2.3.1 Inhalation: Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. Causes respiratory tract irritation. May cause narcotic effects in high concentration. Causes upper respiratory tract irritation. Inhalation of vapors may cause drowsiness and dizziness. May cause motor incoordination and speech abnormalities.

2.3.2 Skin Contact: Causes moderate skin irritation. May cause cyanosis of the extremities. May cause irritation with pain and stinging, especially if the skin is abraded. Isopropanol has a low potential to cause allergic skin reactions; however, rare cases of allergic contact dermatitis have been reported. Dermal absorption has been considered toxicologically insignificant. The cases of deep coma associated with skin contact are thought to be a consequence of gross isopropanol vapor inhalation in rooms with inadequate ventilation, rather than being attributable to percutaneous absorption of isopropanol per se. May be absorbed through the skin. Repeated or prolonged exposure may cause drying and cracking of the skin.

2.3.3 Eye Contact: Causes severe eye irritation. May cause painful sensitization to light. May cause chemical conjunctivitis and corneal damage. Produces irritation, characterized by a burning sensation, redness, tearing, inflammation, and possible corneal injury. May cause transient corneal injury. Vapors may cause eye irritation.

2.3.4 Ingestion: May cause systemic toxicity with acidosis. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure. Causes gastrointestinal irritation with nausea, vomiting and diarrhea. May cause kidney damage. Aspiration of material into the lungs may cause chemical pneumonitis, which may be fatal. The probable oral lethal dose in humans is 240 ml (2696 mg/kg), but ingestion of only 20 ml (224 mg/kg) has, but in gestion of only 20 ml (224 mg/kg) has caused poisoning. May cause irritation of the digestive tract.

Section 3. Composition/Information on Ingredients

CAS #	Hazardous Components (Chemical Name)/ REACH Registration No.	Concentration	EC No./ EC Index No.	GHS Classification
64-17-5	Ethyl alcohol	6.65 -12.35 %	200-578-6 603-002-00-5	Flam. Liq. 2: H225
67-64-1	Acetone	60.0 -90.0 %	200-662-2 606-001-00-8	Flam. Liq. 2: H225 Eye Damage 2A: H319 TOST (SE) 3: H335 H336
7790-69-4	Lithium nitrate	0.1 -1.0 %	232-218-9 NA	

Section 4. First Aid Measures

4.1 Description of First Aid Measures:

In Case of Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid. Do NOT use mouth-to-mouth resuscitation. If inhaled, remove to fresh air.

In Case of Skin Contact: Wash clothing before reuse. In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical aid if irritation develops and persists.

In Case of Eye Contact: Get medical aid. Gently lift eyelids and flush continuously with water. In case of contact, immediately flush eyes with plenty of water for a t least 15 minutes.

In Case of Ingestion: If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Potential for aspiration if swallowed. Get medical aid immediately. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs naturally, have victim lean forward.

Note for the Doctor: Treat symptomatically and supportively. Persons with skin or eye disorders or liver, kidney, chronic respiratory diseases, or central and peripheral nervous sytem diseases may be at increased risk from exposure to this substance.
Antidote: Replace fluid and electrolytes. Urine acetone test may be helpful in diagnosis. Hemodialysis should be considered in severe intoxication.

Section 5. Fire Fighting Measures

5.1 Suitable Extinguishing Media: For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. Water may be ineffective. Do NOT use straight streams of water. For small fires, use carbon dioxide, dry chemical, dry sand, or alcohol-resistant foam. Cool containers with flooding quantities of water until well after fire is out. Use dry chemical, carbon dioxide, or appropriate foam. Water may be ineffective because it will not cool material below its flash point.

5.2 Flammable Properties and Hazards:

Flash Pt: -20.00 C Method Used: Estimate

Explosive Limits: LEL: UEL:

Autoignition Pt: > 350.00 C

5.3 Fire Fighting Instructions: Replace fluid and electrolytes. As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors may form explosive mixtures with air. Vapors can travel to a source of ignition and flash back. Will burn if involved in a fire. Can release vapors that form explosive mixtures at temperatures above the flashpoint. Use water spray to keep fire-exposed containers cool. Flammable liquid and vapor. May form explosive peroxides. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Extremely flammable liquid and vapor. Vapor may cause flash fire. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas.

Section 6. Accidental Release Measures

6.3 Methods and Material For Containment and Cleaning Up: Use proper personal protective equipment as indicated in Section 8. Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation. A vapor suppressing foam may be used to reduce vapors. Use water spray to dilute spill to a non-flammable mixture. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid runoff into storm sewers and ditches which lead to waterways. Wear appropriate protective clothing to minimize contact with skin. Water spray may reduce vapor but may not prevent ignition in closed spaces. Use only non-sparking tools and equipment.

Section 7. Handling and Storage

7.1 Precautions To Be Taken in Handling: Wash thoroughly after handling. Use only in a well-ventilated area. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Keep away from heat, sparks and flame. Avoid ingestion and inhalation. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Remove contaminated clothing and wash before reuse. Take precautionary measures against static discharges. Avoid breathing dust, mist, or vapor. Do not allow to evaporate to near dryness. Use only with adequate ventilation. Avoid breathing vapor.

7.2 Precautions To Be Taken in Storing: Keep away from heat, sparks and flame. Keep away from sources of ignition. Store in a tightly closed container. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area. Do not store near perchlorates, peroxides, chromic acid or nitric acid. Do not store in direct sunlight. After opening, purge container with nitrogen before reclosing. Periodically test for peroxide formation on long-term storage. Addition of water or appropriate reducing materials will lessen peroxide formation. Store protected from moisture. Containers should be dated when opened and tested periodically for the presence of peroxides. Should crystals form in a peroxidizable liquid, peroxidation may have occurred and the product should be considered extremely dangerous. In this instance, the container should only be opened remotely by professionals. All peroxidizable substances should be stored away from heat and light and be protected from ignition sources.

Section 8. Exposure Controls/Personal Protection

8.1 Exposure Parameters:

CAS #	Partial Chemical Name	Britain EH40	France VL	Europe
64-17-5	Ethyl alcohol	TWA: 1920 mg/m3 (1000 ppm) STEL: ()	TWA: 1900 mg/m3 (1000 ppm) STEL: 9500 mg/m3 (5000 ppm)	
67-64-1	Acetone	TWA: 1210 mg/m3 (500 ppm) STEL: 3620 mg/m3 (1500 ppm)	TWA: 1210 mg/m3 (500 ppm) STEL: 2420 mg/m3 (1000 ppm)	TWA: 1210 mg/m3
7790-69-4	Lithium nitrate			

CAS #	Partial Chemical Name	OSHA TWA	ACGIH TWA	Other Limits
64-17-5	Ethyl alcohol	PEL: 1000 ppm	TLV: 1000 ppm	
67-64-1	Acetone	PEL: 1000 ppm	TLV: 500 ppm STEL: 750 ppm	
7790-69-4	Lithium nitrate			

8.2 Exposure Controls:

8.2.1 Engineering Controls (Ventilation etc.): Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits. Ventilation fans and other electrical service must be non-sparking and have an explosion-proof design.

8.2.2 Personal protection equipment:

Eye Protection: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. Wear chemical splash goggles.

Protective Gloves: Wear appropriate protective gloves to prevent skin exposure. Wear butyl rubber gloves, apron, and/or clothing.

Other Protective Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respiratory Equipment (Specify Type): A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use. A NIOSH/MSHA approved or European Standard EN 149 air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected.

Section 9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Physical States:	[ ] Gas [X] Liquid [ ] Solid
Appearance and Odor:	Dark. solvent odor.
Melting Point:	-114.10 C - -88.00 C
Boiling Point:	56.50 C - 82.00 C
Flash Pt:	-20.00 C Method Used: Estimate
Evaporation Rate:	2.1 (BuAC=1)
Explosive Limits:	LEL: UEL:
Vapor Pressure (vs. Air or mm Hg):	~ 70 MM_HG at 20.0 C
Vapor Density (vs. Air = 1):	> Air
Specific Gravity (Water = 1):	0.8200
Density:	6.99 LB/GA
Solubility in Water:	Miscible
Autoignition Pt:	> 350.00 C

9.2 Other Information

Percent Volatile:	~ 85 % by volume.

Section 10. Stability and Reactivity

10.1 Reactivity:	
10.2 Stability:	Unstable [ ] Stable [X]
10.3 Conditions To Avoid - Hazardous Reactions:	
Possibility of Hazardous Reactions:	Will occur [ ] Will not occur [X]
10.4 Conditions To Avoid - Instability:	Incompatible materials, ignition sources, Excess heat, Light, High temperatures, confined spaces.
10.5 Incompatibility - Materials To Avoid:	Strong oxidizing agents, acids, Alkali metals, Ammonia, hydrazine, Peroxides, Sodium, Acid anhydrides, calcium hypochlorite, chromyl chloride, nitrosyl perchlorate, bromine pentafluoride, Perchloric acid, silver nitrate, mercuric nitrate, potassium tert-butoxide, magnesium perchlorate, Acid chlorides, platinum, uranium hexafluoride, silver oxide, iodine heptafluoride, acetyl bromide, disulfuryl difluoride, tetrachlorosilane + water, acetyl chloride, permanganic acid, ruthenium (VIII) oxide, uranyl perchlorate, Strong acids, Amines, ethylene oxide, isocyanates, acetaldehyde, chlorine, phosgene, Attacks some forms of plastics, rubbers, and coatings. aluminum at high temperatures. Strong reducing agents, Strong bases, Nitric acid, hexachloromelamine, sulfur dichloride.
10.6 Hazardous Decomposition Or Byproducts:	Carbon monoxide, irritating and toxic fumes and gases.

Section 11. Toxicological Information

11.1 Information on Toxicological Effects:	
Carcinogenicity/Other Information:	CAS# 64-17-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65. CAS# 67-63-0: Not listed by ACGIH, IARC, NTP, or CA Prop 65. CAS# 67-64-1: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
Carcinogenicity:	NTP? No IARC Monographs? No OSHA Regulated? No

Section 12. Ecological Information

12.1 Toxicity:	When released to the atmosphere it will photodegrade in hours (polluted urban atmosphere) to an estimated range of 4 to 6 days in less polluted areas. Rainout should be significant. Physical: No information available. Ecotoxicity: Fish: Fathead Minnow: 1000 ppm; 96h; LC50Daphnia: 1000 ppm; 96h; LC50Fish: Gold orfe: 8970-9280 ppm; 48h; LC50 IPA has a high biochemical oxygen demand and a potential to cause oxygen depletion in aqueous systems, a low potential to affect aquatic organisms, a low potential to affect secondary waste treatment microbial metabolism, a low potential to affect the germination of some plants, a high potential to biodegrade (low persistence) with unacclimated microorganisms from activated sludge. No information available. Physical: THOD: 2.40 g oxygen/gCOD: 2.23 g oxygen/gBOD-5: 1.19-1.72 g oxygen/g. Other: No information available. Environmental: Volatilizes, leeches, and biodegrades when released to soil. TERRESTRIAL FATE: If released on soil, acetone will both volatilize and leach into the ground. Acetone readily biodegrades and there is evidence suggesting that it biodegrades fairly rapidly in soils. AQUATIC FATE: If released into water, acetone will probably biodegrade. It is readily biodegradable in screening tests, although data from natural water are lacking. It will also be lost due to volatilization

(estimated half-life 20 hr from a model river). Adsorption to sediment should not be significant.
Physical: ATMOSPHERIC FATE: In the atmosphere, acetone will be lost by photolysis and reaction with photochemically produced hydroxyl radicals. Half-life estimates from these combined processes are 79 and 13 days in January and June, respectively, for an overall annual average of 22 days. Therefore considerable dispersion should occur. Being miscible in water, wash out by rain should be an important removal process. This process has been confirmed around Lake Shinsei-ko in Japan. There acetone was found in the air and rain as well as the lake.

Section 13. Disposal Considerations

13.1 Waste Disposal Method: Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series: None listed. RCRA U-Series:
CAS# 67-64-1: waste number U002 (Ignitable waste).: waste number U154.

Section 14. Transport Information

GHS Classification: Flammable Liquids, Category 2 - Danger! Highly flammable liquid and vapor
Serious Eye Damage/Eye Irritation, Category 2A - Warning! Causes serious eye irritation
Target Organ Systemic Toxicity (single exposure), Category 3 - Warning! May cause respiratory irritation,or may cause drowsiness and dizziness

14.1 LAND TRANSPORT (US DOT):

DOT Proper Shipping Name: Printing ink

DOT Hazard Class: 3 FLAMMABLE LIQUID
UN/NA Number: UN1210 **Packing Group:** II

14.1 LAND TRANSPORT (Canadian TDG):

TDG Shipping Name: Printing ink

UN Number: 1210 **Packing Group:** II
Hazard Class: 3 - FLAMMABLE LIQUID **TDG Classification:**

14.1 LAND TRANSPORT (European ADR/RID):

ADR/RID Shipping Name:
UN Number: 1210 **Packing Group:** II
Hazard Class: 3 - FLAMMABLE LIQUID

14.3 AIR TRANSPORT (ICAO/IATA):

ICAO/IATA Shipping Name: Printing ink

Canadian WHMIS Classification:	
	CLASS B, DIVISION 2: Flammable Liquids
	CLASS D, DIVISION 2, SUBDIVISION A: Very Toxic Materials (carcinogens, reproductive toxicity, etc.)

Section 16. Other Information

Revision Date:	01/30/2014
Additional Information About This Product:	
Company Policy or Disclaimer:	The information and recommendations contained herein are, to the best of Hitachi's knowledge and belief, accurate and reliable as of the date issued. Because many factors may affect processing or application/use, HITACHI recommend that you make tests to determine the suitability of a product for your particular purpose prior to use. It is the user's responsibility to satisfy itself that the product is suitable for the intended use. If buyer repackages this product, it is the user's responsibility to insure proper health, safety and other necessary information is included with and/or on the container. Appropriate warnings and safe-handling procedures should be provided to handlers and users. Alteration of this document is strictly prohibited. Except to the extent required by law, re-publication or retransmission of this document, in whole or in part, is not permitted. In no case shall the descriptions, information, data or designs provided be considered a part of our terms and conditions of sale. Further, you expressly understand and agree that the descriptions, designs, date and information furnished by Hitachi hereunder are given gratis and Hitachi assumes no obligation or liability for the description, designs, data and information given or results obtained. All such being given and accepted at your risk.